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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P60145PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP03/00622	International filing date (day/month/year) 22.01.2003	Priority date (day/month/year) 12.02.2002
International Patent Classification (IPC) or both national classification and IPC H05K3/00		
Applicant ATOTECH DEUTSCHLAND GMBH et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 2 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand 02.07.2003	Date of completion of this report 05.11.2003	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Sundqvist, S Telephone No. +49 89 2399-2589 	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP03/00622

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

Description, Pages

1-17 as originally filed

Claims, Numbers

5-10 as originally filed

1-4, 11-14 received on 13.10.2003 with letter of 12.10.2003

Drawings, Sheets

1-4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP03/00622**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 4

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 4

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the Standard.

☐ the computer readable form has not been furnished or does not comply with the Standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-3, 5-14
	No: Claims	
Inventive step (IS)	Yes: Claims	1-3, 5-14
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-3, 5-14
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP03/00622

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The most pertinent available prior art (DE 42 23 541 A) discloses a transporting device in accordance with the preamble of claim 1.

The invention aims at reducing the impact of particles adhering to the surface of the elevations.

To this purpose claim 1 defines a staggered configuration of the opposing elevations along the rollers.

The device claimed in claim 1 and the corresponding method for its use claimed in claim 14 are novel and inventive, because none of the cited documents (ie EP-A-0 913 348, DE 42 23 541 A, DE 198 35 332 A and US-A-3 793 867) suggests the above discussed combination of features.

The invention can undoubtedly be made and used in the industry.

The requirements of the Articles 33(2) to (4) PCT thus all seem to be fulfilled.

**REPLACED BY
ART 34 AMDT**

Claims:

1. A device for transporting flat workpieces in conveyORIZED processing lines
5 with a plane of transportation for the workpieces, said device comprising the following features:

- 10 a) at least one pair of rollers that are disposed on a respective side of the plane of transportation and are facing each other for transporting the workpieces, said rollers each having at least one elevation encircling said rollers, and
b) transport drives associated with said rollers,

15 **wherein** the at least one elevation (7) on the first roller (1) of a pair of rollers located on one side of the plane of transportation (12) is offset relative to the at least one elevation (7) provided on the second roller (2) of the pair of rollers on the other side of the plane of transportation (12).

20 2. The device according to claim 1, **wherein** the elevations (7) annularly or helically encircle the rollers (1, 2).

3. The device according to one of the preceding claims, **wherein** several axially spaced apart elevations (7) are provided on the at least one roller (1, 2).

25 4. The device according to one of the preceding claims, **wherein** there is provided at least one bordering elevation (9) at the end of the rollers (1, 2), said bordering elevation annularly encircling the respective one of the rollers (1, 2), having a diameter such and being disposed in such a manner that the workpiece (4), which has a predetermined thickness, may only be deformed by
30 particles (10) adhering to the rollers (1, 2) to the extent permitted by the elevations (7).

**REPLACED BY
ART 34 AMDT**

11. The device according to one of the preceding claims, **wherein** the elevations (7) have rounded front sides (8).

5 12. The device according to one of the preceding claims, **wherein** the rollers (1, 2) are made from at least one material selected from the group comprising metal, plastic material and ceramics.

10 13. The device according to one of the preceding claims, **wherein** the rollers (1, 2) provided with the elevations (7) are configured to be formed by axes with rings secured thereon in such a manner that the rings are reliably prevented from slipping and twisting.

15 14. A method of transporting flat workpieces (4) in conveyORIZED processing lines with a plane of transportation for the workpieces (4) and with at least one pair of rollers (1, 2), said rollers facing each other and being disposed on a respective side of the plane of transportation for transporting the workpieces (4), the rollers (1, 2) having each at least one elevation (7) encircling the rollers (1, 2), the elevations (7) on the first roller (1) of a pair of rollers being offset
20 relative to the elevations (7) on the second roller (2) of the pair of rollers on the other side of the plane of transportation, and with transport drives associated with the rollers (1, 2),
the workpieces (4) being supplied to the rollers (1, 2) of the at least one pair of rollers in the plane of transportation, said rollers (1, 2) transporting and finally
25 releasing them.